

PROJECT NUMBER: 1902
PROJECT TITLE: Tobacco Microbiology
PROJECT LEADER: D. J. Ayers
PERIOD COVERED: July, 1988

I. SHREDDED STEM STUDY (STORAGE OF STEMS)

- A. Objective: To determine the effect of storage on microbial counts in the pre-ART (35% OV stored for up to 24 hours) and post-ART (35% OV stored for up to 24 hours and 12% OV stored for up to 12 weeks) stems that had been sprayed with 5% citric acid.
- B. Results: In this preliminary experiment, there were no significant changes seen in bacteria counts during the pre-ART and post-ART 24 hour storage study nor were there any significant changes during the first 2 weeks of the 12 week study.
- C. Conclusions: Results from this preliminary experiment suggest that shredded stems sprayed with 5% citric acid (pre- and post-ART) can be stored for up to 24 hours with no major changes in bacterial numbers.
- D. Plans: Continue the study.
- E. References:
1. Jones, J. Notebook No. 8590, pp. 60-61.

II. ALTERNATE HUMECTANT PROGRAM

- A. Objective: To determine if PG/G-free RCB test sheets and available control sheets, produced in the BL Plant, differ in microbial numbers after 12 weeks of storage in the laboratory environmental rooms.
- B. Results: Bacteria, mold and yeast counts were within an expected range.
- C. Conclusions: Microbial counts did not differ significantly between the RCB control and test sheets.
- D. Plans: Document results in a memo.
- E. References:
1. Jones, J. Notebook No. 8590, p. 35, 40 and 52.

III. BACTOMETER CALIBRATION CURVES

- A. Objective: To generate calibration curves for determining the number of bacteria present in a sample using the Bactometer.

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- B. Results: Experiments were conducted to determine if the extraction of bacteria from tobacco samples could be done at room temperature to prevent temperature shock to the bacteria. The results indicated that there was less variation in detection times between replicate samples when the extraction was done at room temperature versus 4°C. In another series of experiments the results indicated that centrifugation of stationary phase cells had minimal impact on growth kinetics (lag time was extended for less than 10 minutes).
- C. Conclusions: Tobacco related samples can be extracted at room temperature without any obvious adverse effects on results and centrifugation at 15,000 g for ten minutes has a negligible effect on growth kinetics.
- D. Plans: Continue this study.
- E. References:
1. Chadick, D. Notebook No. 8625, p. 99.

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